New thieno:imidazole derivatives - are angiotensin-II antagonists for treating hypertonia, cardiac insufficiency, angina pectoris and arteriosclerosis

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Abstract

Thienoimidazole derivs. of formula (I) and their acid and base addn. salts are new, where A is (a)-(c), R1 = H, 1-8C alkyl, 3-6C alkenyl, 3-6C alkynyl (these last 3 gps. opt. substd. with one halogen, one OR5 or 2 CO2R5 gps.), 3-6C cycloalkyl, 1-4C perfluoroalkyl, 1-4C-X alkyl, di(1-4C)alkylamino, -CH2X(1-4C) alkyl or benzyl, R2 = (d) or (e), G = (f)-(k), the dotted line is a double or single bond B is -(CH2)p-, CR116R17, -C (R16R17)CH2-, -CH2C(R16R17)- or C=CR19R19, R3 and R4 = each H, F, Cl, Br, 1-6C alkyl, 2-6C alkenyl, 2-6C alkynyl, 1-6C perfluoroalkyl, 3-6C cycloalkyl, 1-4C alkoxy, CN, C6F5, -(CH2)nOR5, -(CH2)nOCOR5, -(CH2)mCOR6, -(CH2)mNHCOR5, -(CH2)mNHCOOR7, -NR8R9 or -(CH2)mR11 or in the case of A = (a) or (c), R3 and R4 together form a ring via gps. -COY(CH2)p-, -(CH2)pCOY-, -CH2COYCH2-, -CH2Z(CH2)p, -(CH2)pCH2Z-, -CH=CH-W or =CHWCH=, R5 = H or 1-4C alkyl, R6 = H, 1-6C alkyl, 3-6C cycloalkyl, 1-6C perfluoroalkyl, Ph, NR8R9 or OR5, R7 = 1-4C alkyl or benzyl, R8 and R9 = each H, 1-4C alkyl, Ph, benzyl or together with the N form a ring of formula (l), R10 = H, 1-4C alkyl, benzyl or 1-6C alkanoyl, R11 = -C6H4R12, R12 = H, F, Cl, Br, -NR5R10, 1-4C alkoxy, OH or CO2R5, R13 = CO2R5, -NHSO2R20 or (m), R14 and R15 = each H, F, Cl, Br, CN or OR5, R16 and R17 = each H, 1-4C alkyl, 3-4C alkenyl, 3-4C alkynyl or -CH2CH2-, R18 and R19 = each H, 1-4C alkyl or -(CH2)r-, R20 = 1-6C alkyl or 1-6C perfluoroalkyl, T = CH2, O or NR10, W = O, S, NH or CH=CH, X = O, S or NH, Y = O or NH, Z = CH2, O, S or NR10, l = 3, 4, m = 0-3. n = 1-6, p = 1-2. r = 4=5.
USE/ADVANTAGE - (I) are competitive angiotensin II antagonists which bond with high affinity on angiotensin II receptors and inhibit angiotensin II induced effects both in vivo and in vitro. (I) can therefore be used to treat disorders of the heart and circulation e.g. hypertonia, cardiac insufficiency, angina pectoris and arteriosclerosis. Suitable doses are 0.01-50 mg/kg.